

ABSTRACT

A reliable gaseous hydrogen detection and measuring device which is simple, easy to use, does not require any reference gas supply, and which can be of reasonably rugged construction. The device utilizes a disc comprising a solid state ceramic hydronium conductor of the general formula $\text{Na}(\text{H}_3\text{O})\text{Zr}_2\text{Si}_x\text{P}_{(3-x)}\text{O}_{12}$ together with a silver based electrode system on one side, and a catalytic noble metal electrode, such as platinum, on the other. By measurement of the output voltage across the electrodes, both the presence, and the amount, of hydrogen in a gaseous system can be determined.